

Notice of Allowability

Application No.

09/684,856

Examiner

Zandra V. Smith

Applicant(s)

HUNTER ET AL.

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 10 November 2003.
2. ☒ The allowed claim(s) is/are 1-40.
3. ☒ The drawings filed on 06 October 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No. <u>6.10.2003</u> | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8 <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Zandra V. Smith
Primary Examiner
Art Unit: 2877

DETAILED ACTION

Allowable Subject Matter

Claims 1-40 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record, taken alone or in combination, fails to disclose or render obvious, a substrate inspection system that includes determining a topographical condition of the surface based on the difference between the mean value of the signal signature information and the reference mean value, wherein the signal signature information is indicative of process uniformity on the surface of the substrate, in combination with the rest of the limitations of claims 1 and 20.

As to claim 7, the prior art of record, taken alone or in combination, fails to disclose or render obvious, as substratrte inspection system that includes, generating at a processing unit connected to the detector unit, signal signature information for the substrate representing characteristics of the portion of the optical signal, wherein the generating step comprises determining a first number of data readings at a given intensity for a range of signal-signature values, determining a mean value of the signal signature information, subtracting the mean value of the signal signature information from a reference mean value and, wherein the reference mean value is determined using a second number of data readings at the given intensity for the range of signal-signature values, in combination with the rest of the limitations of the claim.

As to claims 8 and 10, the prior art of record, taken alone or in combination, fails to disclose or render obvious, in a substrate inspection, determining a mean value of the signal signature information and wherein determining the mean value of the signal signature information comprises: summing the signal-signature values to yield a sum; and dividing the

Art Unit: 2877

sum by the number of signal-signature values subtracting the mean value of the signal signature information from a reference mean value, in combination with the rest of the limitations of the claims.

As to claim 27, the prior art of record, taken alone or in combination, fails to disclose or render obvious, in a substrate inspection system, performing an analysis of the substrate topography information comprising: at least one of a particle detection analysis and a process monitoring analysis, wherein the process monitoring analysis comprises:

(i) determining whether a difference between a value of the data and a reference value exceeds a predetermined value, and

(ii) if the difference exceeds the predetermined value, determining that an unacceptable topographical condition exists on the substrate, and outputting, to a display, the difference between the data value and the reference value, in combination with the rest of the limitations of the claim.

As to claims 29 and 33, the prior art of record, taken alone or in combination, fails to disclose or render obvious, in a substrate inspection system, receiving substrate topography information from the optical inspection system comprising data obtained from the scanning step wherein the data comprises signal signature values, wherein each of the signal signature values is weighted by a number of occurrences of the signal-intensity value, in combination with the rest of the limitations of the claims.

As to claim 39, the prior art of record, taken alone or in combination, fails to disclose or render obvious, in a substrate inspection system, performing binarization of the data and performing morphological operations on the data wherein morphological operations comprise the

Art Unit: 2877

steps of filtering noise and enhancing the data output, in combination with the rest of the limitations of the claim.

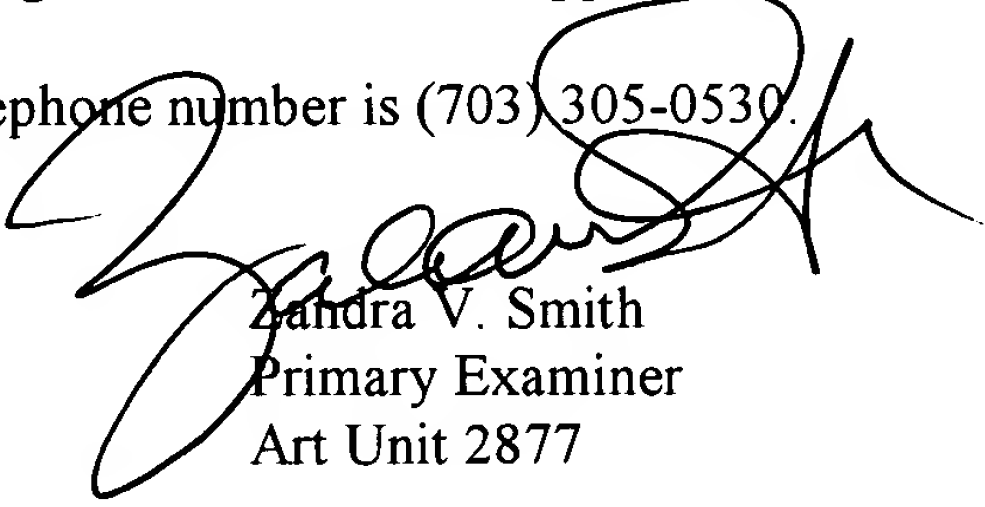
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Fax/Telephone Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (703) 305-7776. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703)308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0530.



Zandra V. Smith
Primary Examiner
Art Unit 2877

January 23, 2004